MITIN, Sergey Andreyevich; IL'IN, V.M., redaktor; LEYKIN, B.P., redaktor; MASLOV, N.A., redaktor; USPENSKIY, V.V., redaktor; CHERYAK, M.Ya., redaktor GOBERMAN, M.D. redaktor; GUSEVA.S.S.tekhnicheskiy redaktor.

[New wage system in construction work] Novye usloviia oplaty truda v stroitel'stve. Moskva, Gos.izd-vo lit-ry po stroit. i arkhit., 1957. 42 p. (MLRA 10:6)
(Wages)

BASHINSKIY, S.V.; GOBERMAN, M.D.; YEVTYUSHKIN, D.S.; MITIN, S.A.; RUSAKOV, A.N.; MASLOV, N.A., redaktor izdatel'stva; PERSON, M.N., tekhnicheskiy redaktor

[A reference book on labor and wages in the building trades] Spravochnik po trudu i zarabotnoi plate v stroitel'stve. Izd. 2-oe, perer. i dop. Moskva, Gos. izd-vo lit-ry po stroit. i arkhitekture, 1956. 420 p.

(Wages) (Building trades) (MLRA 10:1)

MITIN, S.

Concerning the rights and obligations of section efficiency experts (draft regulations). Stroitel' 9 no.10:27-29 O '63. (MIRA 16:11)

L 2922-66
AM4048670

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SUB CODE: IE SUBMITTED: 3Jan64 NR REF SOV: 007

OTHER: 000

Card 2/2

L 2922-66 EWT(d)/EWP(c)/EWP(v)/T/EWP(k)/EWP(h)/EWP(1) IJP(c) BB/GG/JXT(CZ)
AM4048670 BOOK EXPLOITATION UR/ 6P2.15 P76

Kozlova, O.; Brodskiy G.; Dudorin, V.; Mitin, S.; Nikonova, L.; Salomatin, N.

Application of electronic computers to production control (Primeneniye elektronnovychislitel'nykh mashin v upravlenii proizvodstvom) Moscow, Izd-vo "Mysl", 1964. 508 p. illus., fold-in diagrs. 7000 copies printed. Under the editorship of: Professor O. V. Kozlova, Doctor of Economic Sciences; Editor: V. Budarina; Junior editor: L. Ulanova; Proofreaders: L. Chigina, Yu. Starikova, O. Mel'nikova, S. Novitskaya

TOPIC TAGS: automation, electronic computer, production control

PURPOSE AND COVERAGE: This book is expected to be of definitive assistance to industrial personnel. The book was based on research performed in the Nauchno-issledovatel'skaya laboratoriya ekonomiki i organizatsii proizvodstva Mosgorsovnarkhoza at the Moskovskiy inzhenerno-ekonomicheskiy institut imeni Sergo Ordzhonikidze. All the work has been subjected to experimental introduction into practice at several Moscow enterprises.

Card 1/2

L 08803-67

ACC NR: AT6020457

2

to a black body of 12000°K; 3) the charged particle density reached 10^{19} in one cm^3 and the temperature in the central position of the arc discharge was found to be in the range of 30,000-70,000°K. Orig. art. has: 19 formulas, 9 figures.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 008/ OTH REF: 005

Card 2/2 nat

L 08803-67 EWT(d)/EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD/WW/GD/AT

ACC NR: AT6020457 (N) SOURCE CODE: UR/0000/65/000/000/0248/0266

AUTHOR: Mitin, R. V.; Knyazev, Yu. R.; Petrenko, V. I.; Borovik, Ye. S. 73

ORG: none 71

TITLE: Pulse heating in a high pressure argon arc

SOURCE: AN UkrSSR. Vzaimodeystviye puchkov zaryazhennykh chastits s plazmoy (Interaction of charged particle beams with plasma). Kiev, Naukova dumka, 1965, 248-266

TOPIC TAGS: argon, plasma heating, dense plasma, pulse heating, black body radiation

ABSTRACT: This work describes the study of a dense high-temperature argon plasma heated by a steady current with very high current pulses superimposed for a sufficiently long time to establish thermal and hydrodynamic equilibrium. The experimental system consists of the steady current source, a pulse current source (bank of capacitors) and a discharge chamber. The electrical characteristics of the system are described and the dynamic characteristics are given for several capacitor charges. The argon arc was studied spectroscopically and optically with the following results: 1) the electric field in the plasma column was found to have a constant value in the axial direction. Its value increased slightly with current and pressure increase (1/3 and 1/4 powers, respectively); 2) surface radiance increased linearly with the electric power delivered to 1 cm of the arc and at 3.5×10^6 W/cm reached a value corresponding

Card 1/2

L 06306-67

ACC NR: AT6020458

The behavior of the plasma generated by the method described in this work is similar to that of high pressure discharge areas and its advantage consists of the absence of electrode material in the plasma. Orig. art. has: 6 formulas, 4 figures.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 005/ OTH REF: 004

Card 2/2

L 00306-01 EWT(m)/EWP(t)/ETI IJP(c) AT/WD/GD

ACC NR: AT6020458 SOURCE CODE: UR/0000/65/000/000/0267/0272

AUTHOR: Mitin, R. V.; Pryadkin, K. K.

ORG: none

TITLE: Electrodeless discharge at high pressures

SOURCE: AN UkrSSR. Vzaimodeystviye puchkov zaryazhennykh chastits s plazmoy (Interaction of charged particle beams with plasma). Kiev, Naukova dumka, 1965, 267-272

TOPIC TAGS: argon, krypton, gas pressure, gas discharge

ABSTRACT: Electrodeless high frequency discharge in gases at pressures higher than atmospheric is discussed. The generator is described and the experimental apparatus is shown. 1.5 kw, 10 Mc/s generator power was applied to a revolving gas (500 rad/sec) to insure discharge stability. It was established that at high pressure, gas rotation was not necessary. At various pressures the discharge form was found to change shape. Most of the work was done at pressures of 10^4-10^6 N/m^2 in argon and krypton gases. The plasma was studied spectroscopically in the visible and ultraviolet range. The most intense argon lines were 3949, 4198, 4300 Å. The impurity lines were very weak, indicating low content of foreign elements. As the initial pressure in the discharge was increased, the continuum intensity in the visible range increased considerably. At 10^6 N/m^2 pressure, the radiation output approached 30% of the input electrical energy.

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L 27715-66

ACC NR: AP6015314

offered for the observed paramagnetic behavior of the plasmas. The first explanation involves rectification in the presence of a magnetic field of a small fraction (about one percent) of the high-frequency current in the plasma to provide a small dc circulating current giving rise to an induced magnetic moment. The rectification is ascribed to the influence of radial oscillations of the plasma due to the interaction of the circulating high-frequency current with the magnetic field. The rectifying action depends on the variation of the average cross section of the circulating current with the diameter of the plasma, and the rectified current can be of either sign, giving rise to either paramagnetic or diamagnetic behavior. The second explanation ascribes the magnetic behavior of the plasmas to the effects of ambipolar diffusion arising from their nonuniformity. Although ambipolar diffusion ordinarily results in diamagnetic behavior, it can give rise to paramagnetic behavior under some circumstances. It is suggested that both effects may cooperate to produce the observed behavior. In concluding, the authors note that the behavior of electrodeless high-frequency discharge plasmas may have something to do with ball lightning. The authors thank corresponding members Ye.S.Borovik and Ya.B.Faynberg of the AN UkrSSR for their interest and valuable advice. Orig. art. has: 9 formulas and 4 figures. [15]

SUB CODE: 20/ SUBM DATE: 17May65/ ORIG REF: 004/ OTH REF: 003/

ATD PRESS: 5001

Card 3/3 BLG

tained (2.5×10^5 N/m^2). The plasmas in the Ar, Kr, and Xe discharges became almost spherical at a pressure of the order of 10^5 N/m^2, and with further increase of the pressure they floated to the top of the chamber. A discharge could be maintained in Xe at pressures up to 2.0×10^6 N/m^2, in Ar at pressures up to about 1.3×10^6 N/m^2, and in Kr at pressures up to about 0.6×10^6 N/m^3. The power radiated by the plasmas was measured with a thermopile, using a water filter to eliminate the thermal radiation from the hot wall of the discharge tube. The radiated power increased with increasing pressure and increasing atomic weight of the gas. The Xe discharge plasma at 2×10^6 N/m^2 radiated at the rate of approximately 400 W; this radiated power represents practically the full power developed by the exciting oscillator. The behavior of the plasmas in inhomogeneous magnetic fields of 200 to 300 Oe with gradients of the order of 100 Oe/cm was investigated. The plasmas were unexpectedly found to move toward the region of higher magnetic field strength, the paramagnetic force on the plasmas being of the order of the buoyant force. Under certain conditions the plasma in the magnetic field assumed the form of a torus and began to rotate about its axis at several hundred rpm. Measurements of the high-frequency magnetic field strength in the vicinity of the plasmas indicated that the high-frequency current circulating in the plasma was about 30% of the current in the exciting winding. From the high-frequency magnetic field measurements and the loading effect of the plasma on the oscillating circuit it was concluded that the Ar plasma at 3×10^5 N/m^2 was about 0.1% ionized and had a resistivity of 1000 mho/m, an electron density of 3×10^{21} m^{-3}, and a temperature of the order of 10 000 °K. Two explanations are

L 27715-66 EWT(l)/ETC(f)/EPF(n)-2/EWG(m) IJP(c) AT

ACC NR: AP6015314 (A, N) SOURCE CODE: UR/0057/66/036/005/0913/0919

AUTHOR: Mitin, R. V.; Pryadkin, K.K.

ORG: none

TITLE: High-pressure electrodeless discharge and its magnetic properties

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 5, 1966, 913-919

TOPIC TAGS: argon, krypton, xenon, helium, neon, nitrogen, oxygen, gas discharge plasma, inhomogeneous plasma, plasma magnetic field, hf discharge, paramagnetic material, plasma temperature, plasma density, plasma oscillation

ABSTRACT: The authors (ZhTF, 35, No. 7, 1965) have previously investigated high-frequency electrodeless discharges in Ar at pressures from 1 to 20 atm. Here they report the results of similar investigations with the same apparatus on Kr, Xe, He, Ne, N_2, and O_2 (as well as Ar), and investigations of the magnetic properties of the plasmas. The discharges were produced in a 3-cm-diameter closed quartz tube mounted vertically within a winding (or one or several turns) that was excited at 20 MHz by an oscillator operating at a power level of 300 W or lower. The discharge was initiated at low pressure, and the pressure was then gradually raised. It was not possible to achieve high-pressure dicharges in He, N_2, or O_2. The plasma in the Ne discharge was toroidal in form up to the highest pressure at which the discharge could be main-

Card 1/3

L 23565-66

ACC NR: AT6008955

plasma region and above, at pressures greater than $(1-2)\cdot10^3$ atm, is a region of pressure-ionized cesium. The properties of cesium in this region should be intermediate between those of liquid metallic cesium and those of a cesium plasma. It is found that when $n_i \approx 2\cdot10^{21}$, $p \approx 2\cdot10^3$ atm and $T \approx 2\cdot10^3$°K, the electrical conductivity of cesium $\sigma \approx 10^3\ \Omega^{-1}\cdot cm^{-1}$ which is 1/50 of the electrical conductivity of solid metallic cesium and approximately 100 times the electrical conductivity of a completely ionized rarefied cesium plasma at the same temperature. It is pointed out that the results are semiquantitative due to certain simplifying assumptions made in the calculations. However, the formulas should give reasonably accurate results in the high density region. Orig. art. has: 2 figures, 6 formulas.

SUB CODE: 20/ SUBM DATE: 20Oct65/ ORIG REF: 003/ OTH REF: 005

Card 2/2

L 23565-66 EWT(1)/EWT(m) JD/JG/GS/AT

ACC NR: AT6008855 SOURCE CODE: UR/0000/65/000/000/0156/0161

AUTHOR: Mitin, R. V.

ORG: none

TITLE: Cesium ionization under the simultaneous action of high pressures and temperatures

SOURCE: AN UkrSSR. Magnitnyye lovushki (Magnetic traps). Kiev, Naukova dumka, 1965, 156-161

TOPIC TAGS: cesium, ionization potential, pressure effect, high temperature effect, dense plasma, electric conductivity, plasma physics

ABSTRACT: The author calculates the effect of ionization on cesium vapor under the combined action of high pressures and temperatures. Cesium has an ionization potential of 3.9 ev which is lower than that of any other element and therefore requires less pressure and temperature for ionization than any other material. A modified Saha equation was used for calculating the effect of ionization with regard to reduction of the ionization potential of atoms in a dense plasma. The cesium ionization curves are compared with the melting curve and the saturated vapor tension curve. The ionization curves and the saturated vapor curve are bounded by a nearly closed region of unionized cesium. To the left of this region is liquid metallic cesium, to the right is the

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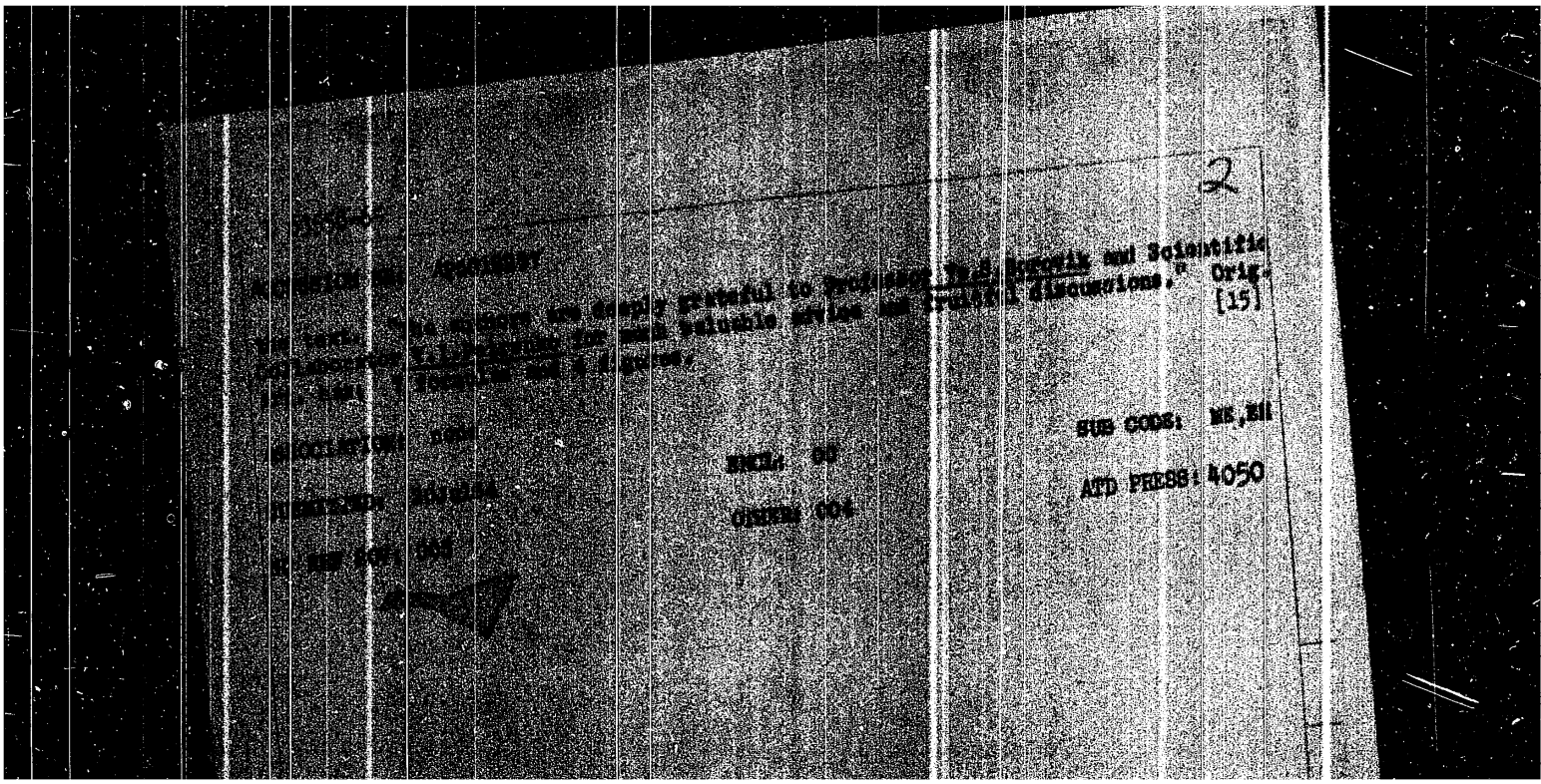
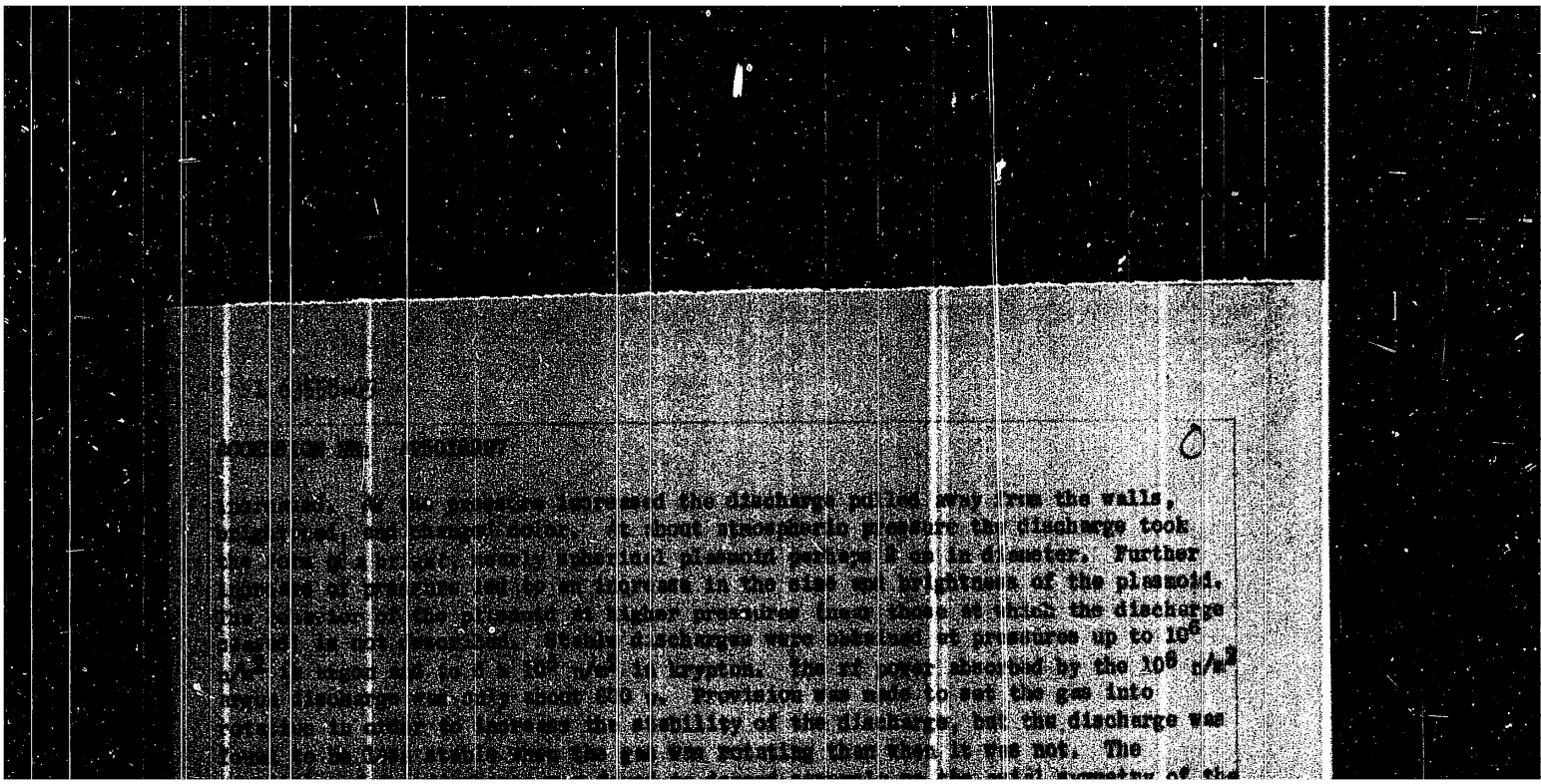
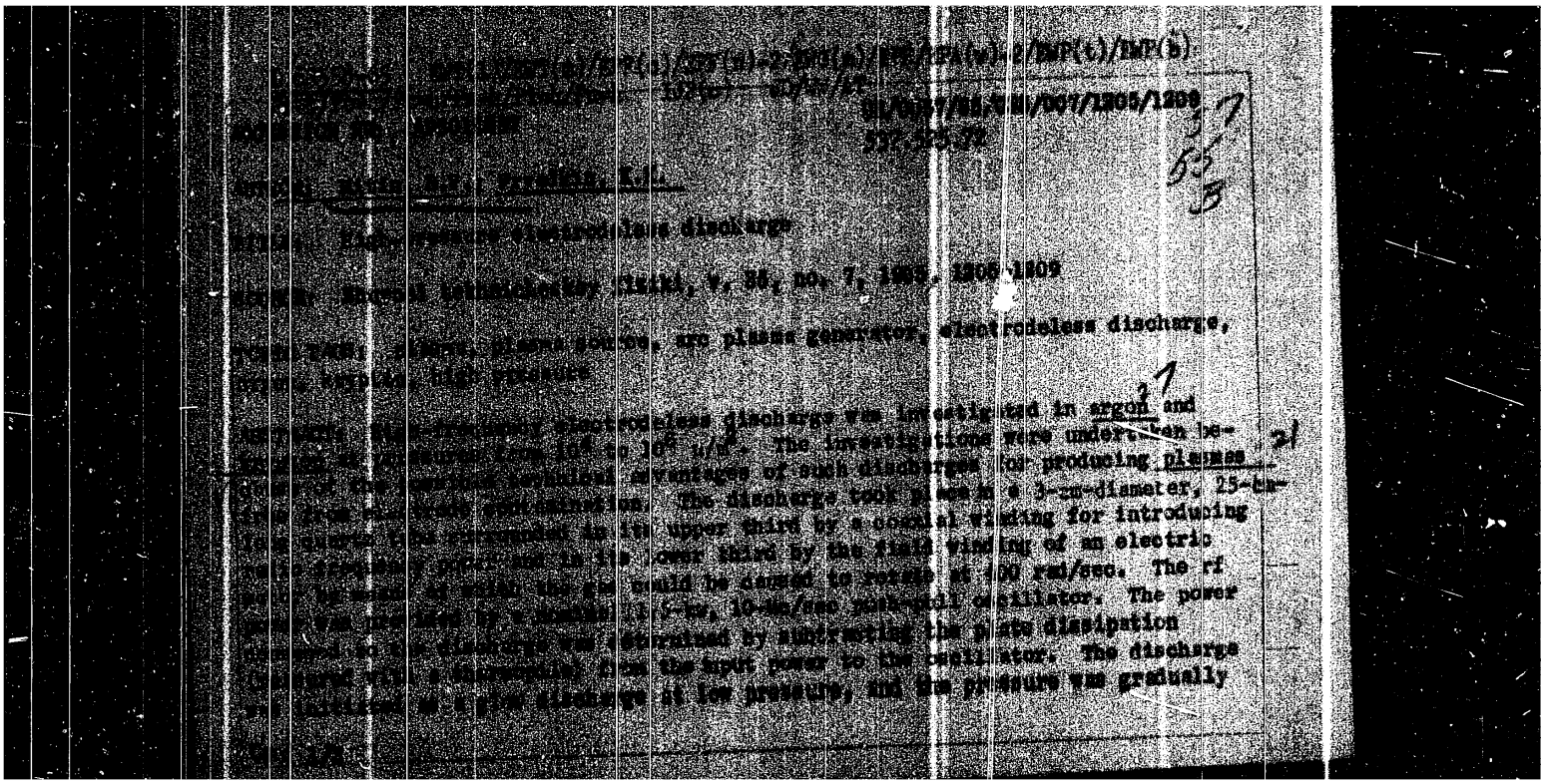
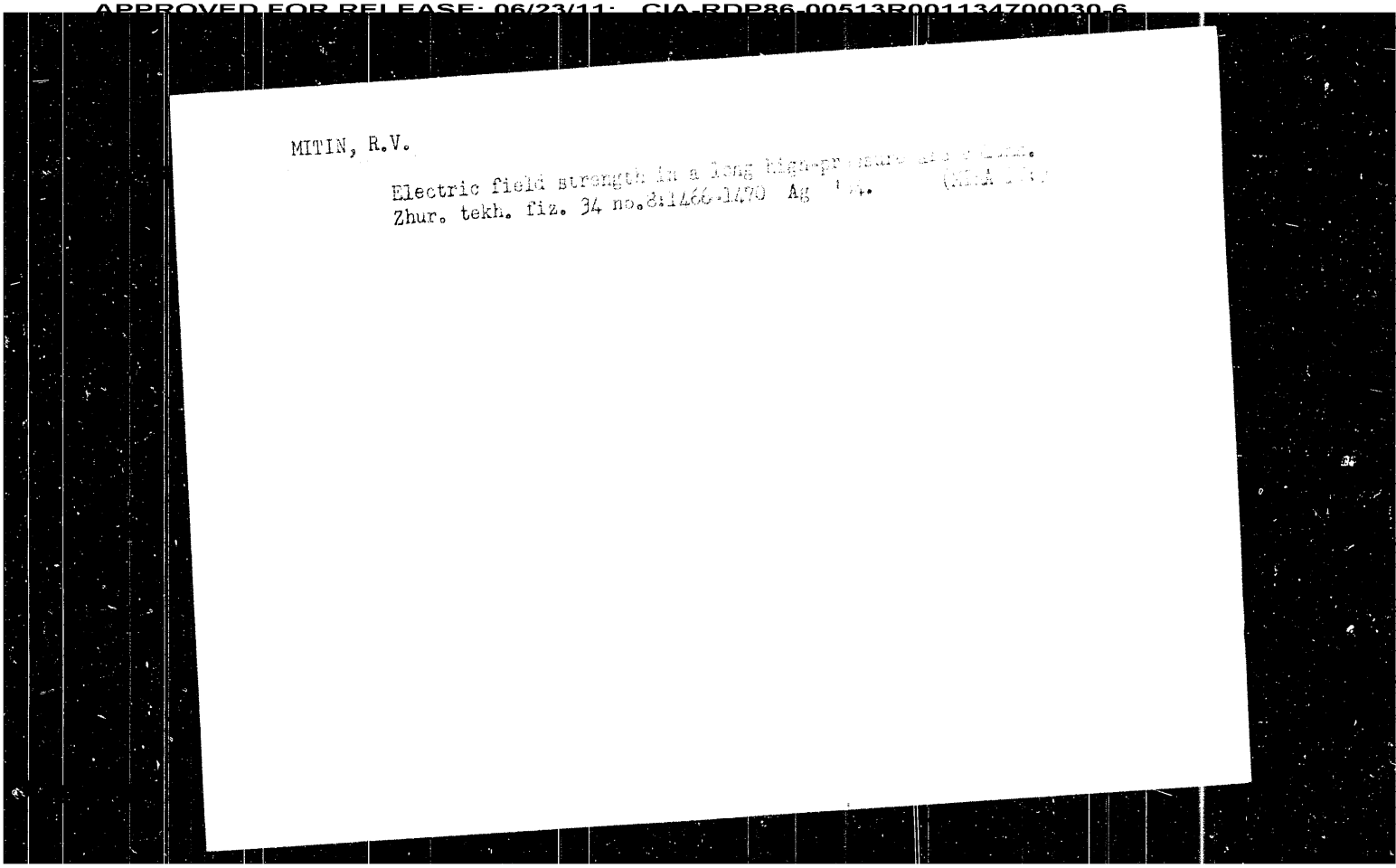


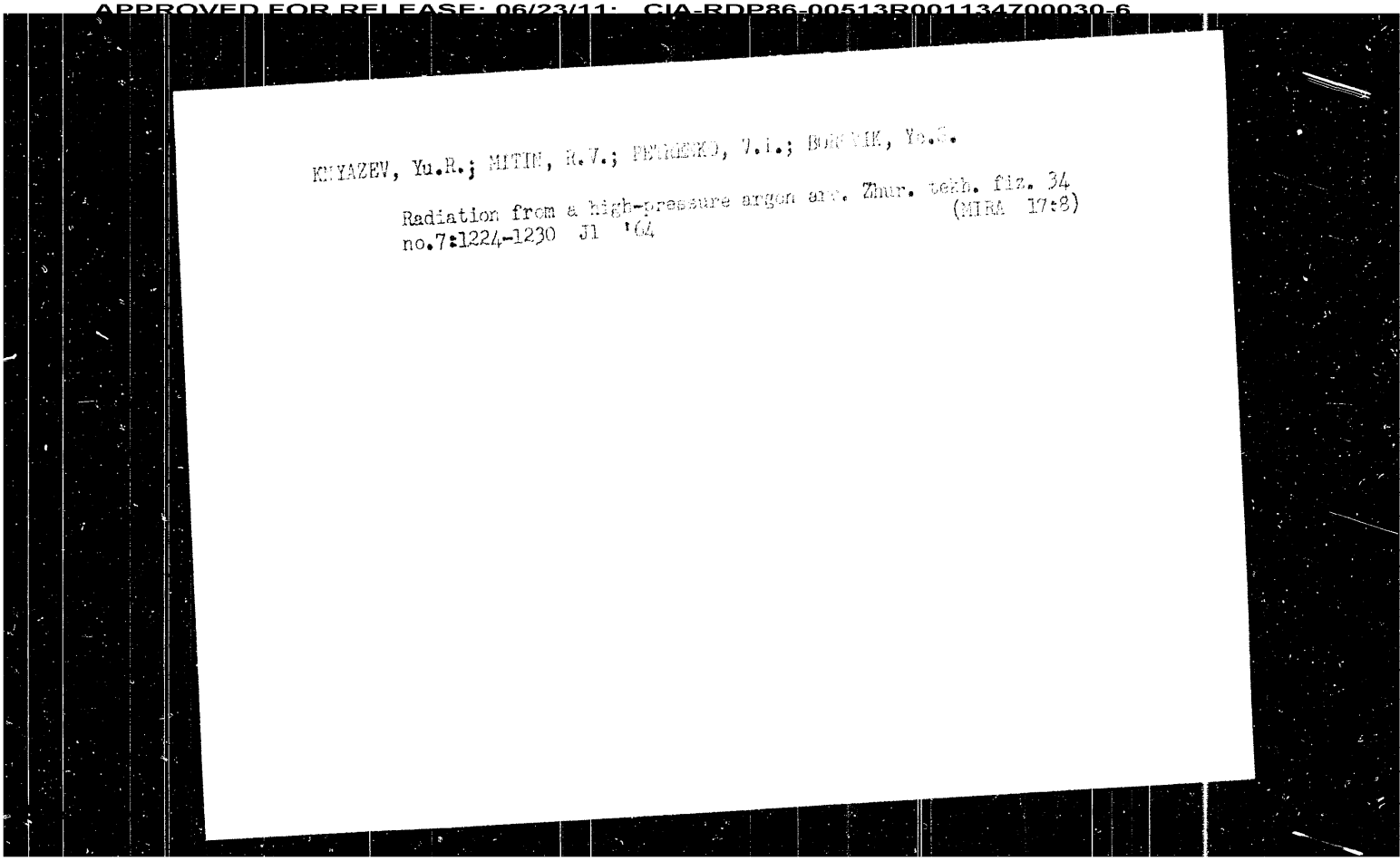






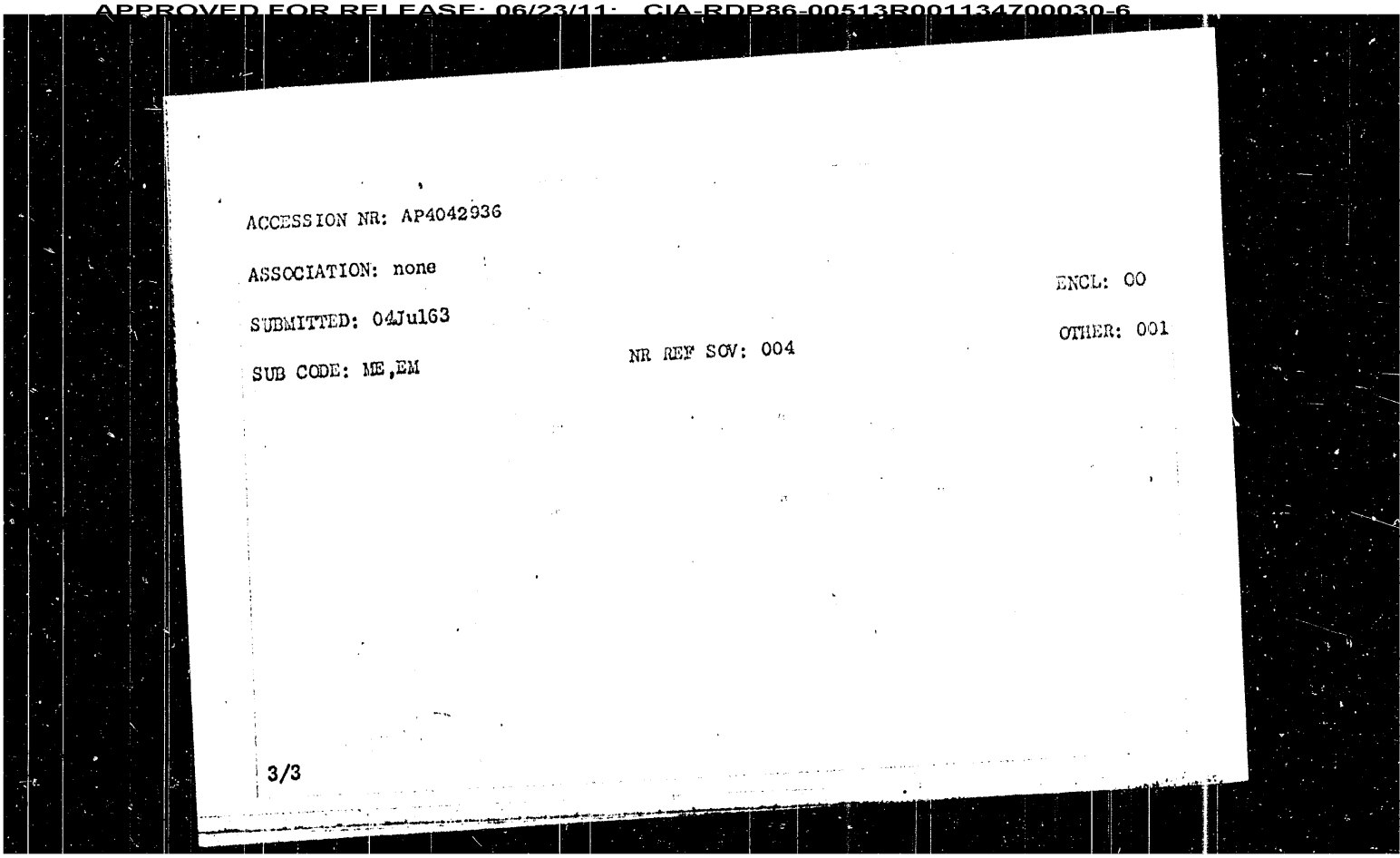
MITIN, R.V.

Electric field strength in a long [illegible]
Zhur. tekh. fiz. 34 no.8:1466-1470 Ag '64.



KNYAZEV, Yu.R.; MITIN, R.V.; PETRENKO, V.I.; BORZIK, Ye.S.

Radiation from a high-pressure argon arc. Zhur. tekh. fiz. 34 no.7:1224-1230 Jl '64 (MIRA 17:8)



ACCESSION NR: AP4042936

ASSOCIATION: none

ENCL: 00

SUBMITTED: 04Jul63

OTHER: 001

SUB CODE: ME,EM

NR REF SOV: 004

3/3

two parameters which in turn depend on T and the radius r of the column. It is argued that T can be considered independent of p and I, since in fact it depends on them only logarithmically, that E is independent of r for small p and I, and, from experimental evidence, that r is constant for large p and I. The parameters are accordingly treated as constants, and the desired equation is thus obtained. The parameters were evaluated separately for helium and argon from experimental data with good accuracy for 100 A arcs at pressures from 2 to perhaps 30 atm, and for arcs at 7 atm at currents from 20 to 175 A. The ratios of the two parameters for helium to the corresponding parameters for argon were calculated theoretically, and the results are compared with the experimental values. For one parameter the theoretical and experimental ratios are in satisfactory but somewhat ambiguous agreement; for the other parameter the ratios differ by a factor 2. This discrepancy is ascribed to the use in the theoretical calculation of tabulated gas kinetic cross sections, which are presumably correct at room temperature but which may not be so at the temperature of the arc. The contribution to the energy loss of radiation from excited neutral atoms is discussed, and it is concluded that inclusion of this effect would not greatly alter the results. "In conclusion, I tender my deep gratitude to Yu.S.Borovik for valuable advice during discussions of the work." Orig.art.has: 10 formulas and 2 figures.

S/0057/64/034/008/1466/1470

ACCESSION NR: AP4042936

AUTHOR: Mitin, R.V.

TITLE: On the electric field strength in a long high-pressure arc column

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.8, 1964, 1466-1470

TOPIC TAGS: discharge column, high pressure arc, helium, argon, plasma

ABSTRACT: This paper is a continuation of earlier experimental and theoretical work on long high-pressure helium and argon arcs by the present author in collaboration with Ye.S.Borovik, Yu.R.Knyazev and V.I.Petrenko (ZhTF 31,1329,1961; 34,340, 1964; 34,1224,1964). An approximate equation is here derived relating the electric field strength E in the arc column, the current I, and the pressure p, and this equation is compared with earlier experimental results. The desired equation is obtained from the energy balance equation, in which energy losses due to heat conduction and recombination radiation are included, and a theoretical equation for the electric conductivity of the plasma. Both the radiation loss and the electric conductivity depend exponentially on the temperature T. Elimination of this exponential leads to a cubic equation for E, the coefficients of which are functions of p, I and

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ACCESSION NR: AP4041997

stabilized argon arcs between water-cooled metallic electrodes were investigated with the apparatus mentioned above. Currents up to 150 A were employed. With fixed pressure and arc current, the voltage across the arc increased linearly with the length of the arc for arcs more than a few centimeters long. The electric field within the arc column was assumed to be equal to the rate of increase of arc voltage with length. The electric field increased with gas pressure and was approximately 15 V/cm at a pressure of 8 MN/cm^2. The radiation of the arc column was measured with a thermocouple taken from a radiation pyrometer and calibrated with solar radiation against a calorimeter. The radiation was large near the electrodes, but the power radiated per unit length by the arc column was constant and only a few percent less than the product of the arc current by the electric field in the column. This confirms a previous conjecture that the energy loss from the arc column by convection is small. Most of the energy supplied to arcs more than a few centimeters long was lost by radiation. Orig.art.has: 3 formulas, 5 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 04Jul63 ENCL: 00

SUB CODE: EM,ME NR REF SOV: 002 OTHER: 002

Card
2/2

S/0057/64/034/007/1224/1230

ACCESSION NR: AP4041997

AUTHOR: Knyazev,Yu.P.; Mitin,R.V.; Petrenko,V.I.; Borovik,Ye.S.

TITLE: Radiation of a high pressure argon arc

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.7, 1964, 1224-1230

TOPIC TAGS: arc radiation, arc stability, high pressure arc, argon plasma

ABSTRACT: The authors have previously described a method for stabilizing a high pressure arc by causing the surrounding gas to rotate, and have reported experimental results obtained with helium and argon arcs (Ye.S.Borvnik,R.V.Mitin and Yu.R. Knyazev,ZhTF 31,1329,1961; R.V.Mitin, Yu.R.Knyazev and V.I.Petrenko,ZhTF 34,340,1964). Now they describe two new methods for inducing the stabilizing rotation of the gas. In one series of experiments a disc bearing a number of vanes was rotated at one end of the arc chamber. With this apparatus arcs up to 8 cm long could be investigated at pressures up to 10 MN/cm^2. In another series, gas was injected tangentially to the cylindrical wall of the arc chamber by nozzles, withdrawn through openings in the end plates, and recirculated by a pump. With this apparatus arcs up to 25 cm long could be investigated at pressures up to 2.5 MN/cm^2. High pressure rotation

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ACCESSION NR: AP4013425

and at high currents the electric field within the column was approximately proportional to the pressure. The luminous flux from the arc was measured with a vacuum photocell. The luminous flux was found to be proportional to $I^m p^n$, where I is the current, p is the pressure, the exponent m drops from 1.5 to 1.0 as p increases from 6 to 60 atmospheres, and n drops from 1.2 to 1.0 as I increases from 10 to 100 A. Thus, at high pressures and currents the luminous flux is proportional to Ip. Since the potential drop is also proportional to p under these conditions, the radiative efficiency is constant. This constant radiative efficiency was not measured, but the authors consider it logical to assume the efficiency to be unity, i.e., that all the energy loss at high current and pressure is due to radiation. The temperature of the arc was estimated from its conductivity. At 100 A and 32 atmospheres, the temperature was thus found to be about 10^4 °K. The corresponding degree of ionization is 1%. Orig.art.has: 5 formulas and 6 figures.

ASSOCIATION: none

SUBMITTED: 24Dec62 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: PH NR REF SOV: 001 OTHER: 002

Card 2/2

ACCESSION NR: AP4013425 S/0057/64/034/002/0340/0343

AUTHOR: Mitin, R.V.; Knyazev, Yu.R.; Petrenko, V.I.

TITLE: Long high-pressure arc in argon

SOURCE: Zhurnal tekhn.fiz., v.34, no.2, 1964, 340-343

TOPIC TAGS: long arc, high pressure arc, argon arc, rotating gas arc, rotation stabilized arc, argon

ABSTRACT: Argon arcs up to 8 cm long were investigated at pressures from 3 to 100 atmospheres and currents from 10 to 150 A in the rotating gas apparatus described elsewhere (Ye.S.Borovik, R.V.Mitin, Yu.R.Knyazev, ZhTF 31, 1329, 1961). The apparatus was so altered as to make possible rotation speeds up to 8000 rpm, and an observation window was provided. At rotation speeds above 2500 rpm the arc was stable. At speeds below 2000 rpm the cathode spot was mobile, the column vibrated, and the potential fluctuated and increased with decreasing rotation speed. The measurements reported were conducted in the stable region at rotation speeds from 4000 to 6000 rpm. The diameter of the luminous portion of the arc increased with increasing current and pressure. The potential drop across the arc increased with pressure,

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Long high-pressure arcs

losses in the electrodes were determined by measuring the quantity of heat set free in the electrodes and in the casing of the chamber. As the arc length is increased from 1 to 5 cm, the portion of electrode losses drops from 80 to 45 %. The volt-ampere characteristics of a helium arc are shown in Fig. 4, and the arc voltage as a function of helium pressure is plotted in Fig. 5. Finally, the results are compared with the theory of the "channel model" of arcs (H. Maecker, Erg. d. ex. Naturw., 25, 293, 1951; W. Finkelburg, H. Maecker, Handb. d. Phys , 22, 254, 1956). Summing up: 1) If the gas surrounding the arc rotates, it is possible to obtain stable long arcs at helium pressures of 1 - 100 atm. 2) In arcs longer than 5 cm the greater part of energy is set free in the column. 3) At pressures above 20 - 30 atm, radiation losses will predominate. 4) A study of the interconnection between pressure, voltage drop, and current in the arc makes it possible to calculate the radius of the arc channel, the plasma temperature, and the ionization degree. There are 5 figures and 10 references: 1 Soviet and 9 non-Soviet.

SUBMITTED: March 20, 1961

Card 2/4

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B104/B108

76.Y3/1

AUTHORS: Borovik, Ye. S., Mitin, R. V., and Knyazev, Yu. R.

TITLE: Long high-pressure arcs

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 11, 1961, 1329 - 1336

TEXT: A device for producing long arcs (up to 8 cm) at pressures of some ten atmospheres is described. Diagrams are shown in Figs. 1 and 2. The chamber 1 (Fig. 1), made of stainless steel (inner diameter 85 mm, 400 mm high), is closed by steel flanges 2. The chamber is designed for pressures up to 100 atm. The two copper electrodes are water-cooled. The anode 3 is fixed, and the cathode 4 is adjustable. The maximum electrode spacing is 10 cm. The heat-insulating screen-system 5 is rotated by an electric motor 8,9 (2500 rpm). A sectional view of one of the electrodes is shown in Fig. 2. Without rotating insulation it was impossible to obtain long arcs in a hydrogen atmosphere. With rotating insulation the arcs became more stable and reached a length of 8 cm. In helium the maximum arc length without rotating insulation was 4 cm, and with rotating insulation it was 8 cm (He pressure, 30 atm; V_{max} = 400 v). The axial losses and the

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Investigation of...

Fig. 5. (a) Dependence of the signal strength on the angle of rotation of the probe in the plane parallel to the arc axis. The solid lines indicate a magnetic field direction anode-cathode, whereas the broken lines indicate the reverse direction. (б) The same in the plane perpendicular to the arc axis.

Fig. 1

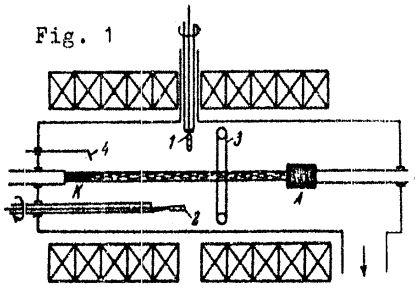
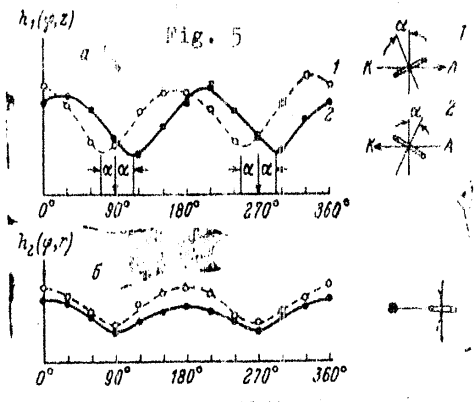


Fig. 5



Card 3/3

Investigation of...

with the magnetic field strength. (B) The frequency decreases with increasing arc length L, remains, however, practically constant above L=30. (C) The rotatable probe 1 (Fig. 1) is used to investigate the spatial distribution of the high-frequency field near the arc. Results are shown in Fig. 5. (D) The strength of the h_φ - component of the alternating field was measured at different distances from the arc; it decreases like $1/r^{3/2}$, and is greater when the magnetic field strength is low. Conclusion: The frequencies of the oscillations investigated range within $\sqrt{\omega_{H_i}\,\omega_{H_e}}$, i. e., within hydromagnetic waves. The linear dependence of the frequency on the magnetic field strength also fully agrees with the well-known expression for hydromagnetic waves $v = H/\sqrt{4\pi\rho}$. The authors thank K. D. Sinel'nikov for advice. There are 7 figures and 3 references: 1 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: I. S. Luce, Geneva conference, 1958; I. A. Sower, D. L. Scott, T. F. Stratton, Phys. of Fluids, 2, 47, 1959.

SUBMITTED: September 10, 1960

Card 2/3

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B100/B102

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26.2311

AUTHORS: Safronov, B. G., Mitin, R. V., Kalmykov, A. A., and Konovalov, V. G.

TITLE: Investigation of high-frequency oscillations of the plasma column of a vacuum arc

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 10, 1961, 1246-1252

TEXT: A vacuum arc is used for the experimental investigation of natural oscillations of a plasma in the range of a few Mc/sec. Test arrangement (Fig. 1): Two graphite electrodes (10 cm long and 50 and 5 mm, respectively, in diameter) are placed in a water-cooled vacuum chamber (20 cm in diameter, 60 cm long) which is enclosed by a solenoid. Maximum magnetic field strength is 5000 oersteds. Electrode 4 is used for the priming (1500 v). Operating parameters: pressure about $5 \cdot 10^{-6}$ mm Hg; arc amperage 100 - 300 a; arc length L 2 - 50 cm; arc voltage V(volt) = 47 + 0.6 L(cm). The high-frequency oscillations are picked up by the magnetic probes 1, 2, 3 (Fig. 1) and are recorded with an OK-17M (OK-17M) oscilloscope. Measuring results: (A) The frequency increases linearly

Card 1/3

SAFRONOV, B.G.; MITIN, K.V.; KALYKOV, A.A.; KONOVALOV, V.G.

[High-frequency oscillations of a plasma filament generated in a vacuum arc] Issledovanie vysokochastotnykh kolebanii plazmennogo shnura vakuumnoi dugi. Khar'kov, Fiziko-tekhn. in-t AN USSR, 1960. 215-226 p.
(MIRA 17:1)

(Plasma (Ionized gases)) (Electric arc)

SOV/58-59-5-11088

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, p 168 (USSR)

AUTHORS: Fogel', Ya.M., Mitin, R.V.

TITLE: Double Charge-Exchange Involving Singly-Charged Cl^+ Ions in Single-Stage Collisions With Gas Molecules

PERIODICAL: Uch. zap. Khar'kovsk. un-t, 1958, Vol 98, Tr. fiz. otd. fiz.-matem. fak., Vol 7, pp 195 - 202

ABSTRACT: Using the mass-spectrographic method, the authors measured the effective cross sections of the double charge-exchange σ_{1-1} of 13 - 15 Kev Cl_1^+ ions in H_2, N_2, O_2, Ar, Kr and Xe. A comparison of the results with the data on the double charge-exchange of Li^+, C_1^+ and O_1^+ (of abs 11087) shows that the conclusions based on the analysis of the experimental data pertaining to the double charge-exchange of the latter ions are only partially borne out. The bibliography contains 9 titles.

Card 1/1

On the Applicability of Massey's Adiabatic Hypothesis to [illegible]
Double Charge Exchange Processes

molecular gases. According to equation (1) $a|\Delta E|/h\nu \approx 1$ the following is given (in Å) for: $H^+ - H_2$: 2,3; $O^+ - H_2$:0,9; $F^+ - H_2$:0,9; $H^+ - H_2$:[illegible],0; $Cl^+ - H_2$:[illegible]
In conclusion the authors thank Professor A.K.V[illegible]ter for the interest he displayed in this work. There are 7 figures, 3 tables, and 17 references, [illegible] of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physico-Mathematical Institute of the Academy of Sciences, Ukrainskaya SSR)

SUBMITTED: March 15, 1958

Card 3/3

On the Applicability of [illegible]'s Adiabatic Hypothesis to [illegible]
Double Charge Exchange Processes

according to the mass-spectroscopic method by [illegible] a device which is described in a [illegible]. The measurements of cross sections σ_{i-1} for O_2^+, CO^+, N_2^+ agree (within the error limits) with those of [illegible] 11 and 12, whereas those obtained for $H_2^+ \rightarrow H^+$ [illegible] in values that are lower by 1 1/2 to [illegible] than those of reference 9. It was found [illegible] position of the maxima of the $\sigma_{i-1}(v)$-curves [illegible] corresponds to Massey's adiabatic criterion. [illegible] carrying out such an analysis it is important [illegible] into consideration the existence of excited ions [illegible] the primary beam as well as the formation of [illegible] excited double-charged ions. Like in the case of ordinary charge exchange the constant a in the [illegible] charge exchange depends slightly on the nature of the ion-molecule pair. (a = distance upon which the [illegible] of interaction between the impinging particles [illegible]. The a-value for the double-charge exchange in [illegible] (average: 1,5 Å) differs essentially from [illegible]

Card 2/3

21(0)

AUTHORS: Fogel', Ya. M., [illegible], R. V., Zorikov, V. P., [illegible]
Romashko, N. D.

TITLE: On the Applicability of Mesney's Adiabatic Hypothesis to Double Charge Exchange Processes (O primenimosti adiabaticheskoy gipotezy Messi k protsessam dvoynoy peremeny zaryada)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 3, pp 565 - 574 (USSR)

ABSTRACT: The present paper aims at analyzing the ion velocity dependence of the effective cross sections for double charge exchange of some types of ions in inert gases. The effective cross sections of the following processes were measured: $H_1^+ \rightarrow H_1^-$ in He, Ne, Ar, Kr, Xe, H_2, N_2 in the energy interval of 5-65 kV, further $O_1^+ \rightarrow O_1^-$ in Ar, Kr and Xe (50-65 keV), O_1^+ - O_1^- in Ar and Kr (50-65 keV) Cl_1^+ - Cl_1^- in Xe (50-60 keV) and $F_1^+ \rightarrow F_1^-$ in He, Ne, Ar, Kr, Xe and H_2 (5-50 keV). Figures 1-6 show the curves σ_{1-1} (v) for the various ions. Measurements were carried out

Card 1/3

SOV/57-28-7-25/35

On the Method of Measuring the Effective Cross Sections of the Formation Processes of Negative Ions in Atomic Collisions

references.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR, Khar'kov
(Physico-technical Institute, AS Ukrainian SSR, Khar'kov)

SUBMITTED: October 11, 1957

Ions--Nuclear reactions

Card 3/3

On the Method of Measuring the Effective Cross Sections of the Formation Processes of Negative Ions in Atomic Collisions

SOV/57-23-7-25/35

the data of the measurement of the equal cross sections by means of the mass-spectrometric method is carried out. The principle of the new method is explained by a concrete example. The apparatus described in detail in an earlier work (Ref 2) is used for the measurement of the cross sections of capture of two electrons by single-charged positive ions according to the method described. The ions H^+ in H_2 and Kr and the ions C^+, O^+ and Cl^+ in Kr, i.e. the cross sections of their double overcharge was measured, and the data obtained were compared to those results obtained by the mass-spectrometric method. The results of the measurements show that in the case of the investigated ion-molecule pairs forming due to double overcharge the negative ions are scattered through very small angles. The method described can be used without limitation for the measurement of cross sections expressed by the formula (1). It is suited for cross sections of the electron-loss processes only on the condition that the cross section of the loss of an electron is by far greater than the sum of the cross sections of the loss of two, three etc. electrons. There are 8 figures and 11 [illegible]

Card 2/3

SOV/57-28-7-25/33

AUTHORS: Fogel', Ya. M., Mirin, R. V., Koslov, V. F.

TITLE: On the Method of Measuring the Effective Cross Sections of the Formation Processes of Negative Ions in Atomic Collisions (K voprosu o metodike izmereniya effektivnykh secheniy protsessov obrazovaniya otritsatel'nykh ionov pri atomnykh stolknoveniyakh)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1958, Vol. 28, Nr 7, pp. 1526-1537 (USSR)

ABSTRACT: The processes of the formation of negative ions in atomic collisions are in a general form expressed by formula (1). However, for the measurement of the effective cross sections of the process a new method is proposed. The influence of inhomogeneous scattering shows much less effect in this case on the magnitude of the measured cross section than is the case when using the mass spectrometric method. This method is described, the results of the measurements of the effective cross sections of double overcharge are given according to the new method and the comparison of these data with

Card 1/3

[illegible], R.V., Cand Phys-Math Sci--(diss) "[illegible] upon single-stage collisions of H+, C+, [illegible]+, F+, Cl+ ions with molecules of [illegible]." Khar'kov, 19[illegible]. [illegible] pp ([illegible] Khar'kov Order of Labor Red Banner State Univ im [illegible] Gor'kiy), 1[illegible] copies. Bibliography [illegible] ([illegible]) ([illegible],1[illegible])

ILLEGIBLE

Zurn.eksp.i.teor.fis, 31, fasc.3, 397 - 404 (1956) CARD 2 / 2 PA - 1617

section σ_{1-1} beginning from about 30 keV up to the end of the interval remains constant and σ_{1-1} remains constant in two furtner cases, namely for C_1^+ in Kr between 27 and 32 MeV as well as for C_1^+ in O_2 between 32 and 43 MeV. However, in these cases there is a new increase of σ_{1-1} behind this plateau. Only in the case of O_1^+ in Xe does σ_{1-1} have a flat maximum at ~30 keV within the energy interval investigated. The amount of σ_{1-1} for a given ion changes within very wide limits: For C_1^+ from $3{,}2.10^{-20}$ cm^2 (in He; 32,4 KeV) up to $6{,}4.10^{-17}$ cm^2 (in Xe at 54,5 keV). σ_{1-1} depends to a considerable extent on the purity of the gas in which the electrons are captured. At the same energy σ_{1-1} increases for C_1^+ - and O_1^+ - ions in the following order: He, Ne, H_2, N_2, O_2, A, Kr, Xe. An exception to this rule is mentioned. From these and other results the following conclusions are drawn: σ_{1-1} decreases with an increase of the energy binding the electrons to the particle losing them. σ_{1-1} increases with increasing binding energy of the electrons in the negative ion which is created. The defect of the resonance process is not a universal parameter for the determination of the cross section of the twofold charge exchange in the case of any ion molecule pair. The elucidation of the general character of these conclusions requires further investigations.

INSTITUTION: Physical - Technical Institute of the Academy of Sciences of the Ukrainian SSR.

MITIN, R.V.

SUBJECT USSR / PHYSICS
AUTHOR FOGEL', JA.M., MITIN, R.V., KOVAL', A.G. CARD 1 / 2 PA - 1617
TITLE The Study of the Capturing Processes of Two Electrons on the Occasion of Collisions of Positive Carbon- and Oxygen Ions with Gas Molecules.
PERIODICAL Zurn. eksp. i. teor. fis, 31, fasc.3, 397 - 404 (1956)
Issued: 12 / 1956

The present work measures the cross sections of the twofold charge exchange on the occasion of the passage of C_1^+ - and O_1^+ -ion bundles through Ne, He, A, Kr, Xe, H_2, N_2, and O_2.

Apparatus and measuring method: These double charge exchange processes were investigated by means of a double mass spectrometer. The bundles of the C_1^+ - and O_1^+ - ions were produced by blowing oxygen gas through a bimetallic valve into a high frequency ion source. The bundle of the C_1^+ - and O_1^+ - ions also contained considerable quantities of CO^+ - and CO_2^+ - ions as well as small quantities of H_1^+, H_2^+, H_3^+, N_1^+ - ions.

Discussion of measuring results: The aforementioned cross sections of the twofold charge exchange were investigated within the energy interval of from 10,7 to 54,5 keV. The results obtained are illustrated by two diagrams. Within the energy interval investigated the cross section σ_{1-1} of the capture of two electrons by C_1^+ - ions in He, Ne, A, Xe, H_2 and N_2 as well as by O_1^+ - ions in He, Ne, and N_2 increases monotonously with increasing ion energy. The velocity of the increase of σ_{1-1} on this occasion diminishes with increasing ion energy, which is indicative of an approximation towards a maximum. For O_1^+ - ions in A, Kr, H_2, O_2 the cross

MITIN, R. V.

USSR/Nuclear Physics - Penetration of Charged and Neutral Particles Through Matter, C-6

Abst Journal: Referat Zhur - Fizika, No 2, 1956, 3410

Author: Fogel', Ya. M., Mitin, R. V.

Institution: Physicotechnical Institute, Academy of Sciences Ukrainian SSR, Khar'kov State University

Title: Formation of Negative Ions of Hydrogen During Collision of Protons with Gas Molecules

Original Periodical: Zh. eksperim. i teor. fiziki, 1956, 30, No 3, 450-457

Abstract: The capture cross sections of 2 electrons were measured during proton collisions of 9.5-29 kev with molecules of H_2, N_2, O_2, He, Ne, and Ar. The energy dependence of the ratio of the number of negative ions of hydrogen to the number of protons in a balanced beam, formed after the passage of the proton beam through the gas targets made of the above 6 gases, is determined. Based on the data obtained, the capture cross section of one electron was calculated for a collision of a fast hydrogen atom with a H_2 molecule.

- 1 -

1 of 1

FLINT, V.Ye.; CHUGUNOV, Yu.D.; SMIRIN, V.M.; FORMOZOV, A.N., prof., red.; MITIN, R.S., red.

[Mammals of the U.S.S.R.] Mlekopitaiushchie SSSR. Moskva, Mysl', 1965. 437 p. (MIRA 18:7)

MITIN, P.V.

We have exceeded plans in the construction of semiautomatic block systems. Avtom., telem. i sviaz'7 no.1:26 Ja '63. (MIRA 16:2)

1. Nachal'nik sluzhby signalizatsii i svyazi Yuzhnoy dorogi.
(Railroads—Signaling—Block system)

lipse began to disappear but the false suns were still visible for 15 minutes. At that time the sky was covered by fine transparent cirrus clouds (cirrostratus) with fractostratus moving above them from South to North at an altitude of 800 - 1000 m.

The air temperature was -30.8°, relative humidity 72%. Ice crystals separated from the cirrus clouds. Under the microscope they had the shape of small stars with 3 - 6 individual rays which were not at all similar to those observed in middle latitudes. The formation of the belt described is apparently explained by the presence of the fractostratus and the specific position of the crystals of a certain shape. The appearance of the halo with some false suns (up to 6) is characteristic of Central Antarctica.

ASSOCIATION: Antarktida, stantsiya Vostok (Antarctic Station Vostok)

3 (7)

AUTHOR: Litin, P. F.

SOV/50-[illegible]-3/24

TITLE: An Interesting Optic Phenomenon in the Antarctica. (Interesnoye opticheskoye yavleniye v Antarktide)

PERIODICAL: Meteorologiya i gidrologiya, 1959, No 3, pp 39 - 40 (USSR)

ABSTRACT: This paper gives a description of an optic phenomenon on December 14, 1958 observed at the Vostok Station in the Antarctica. At 7.30 (Moscow time) a halo was observed around the sun at an angle of 22°. At 8.10 two false suns appeared at the halo periphery. They were traversed by arcs and formed an external ellipse around the halo. A belt then formed expanding all over the sky and crossing the two false suns. At 8.20 a second halo formed at an angle of 46° with the upper semicircle being totally visible while the lower one could be observed only at three individual places. At that time the belt was only partly visible near the halo. Five minutes later the second halo became invisible, the first one with the false suns. The ellipse, however, was still visible. The belt appeared and disappeared several times from 8.45 to 9.06. At 9.15 the halo and the el-

Card 1/2

25-th Anniversary of the Zaporozh'ye Works for Refractories 151-58-6-1/14

ments and modernizations are provided. There are 1 figure.

ASSOCIATION: Zaporozhskiy ogneupornyy zavod (Zaporozh'ye Works for Refractories)

1. Industrial plants--Development 2. Refractory materials

Card 3/3

ment were automized. In the years 1956-1957 the annular kilns, the air preheaters of the tunnel drying plants, as well as the drying drums were changed to gas heating and this year it was the boiler plant. In 1956 a department for chromium magnesite products with an annual output of 18o coot was put into operation. UZTM hydraulic presses with a pressure of 1ooot were mounted. At the proposal of efficiency experts, V.G. Sterun, M. I. Kolesnik, M. K. Miroshnichenko, M. I. Sotnik and M. Ya. Antonenko the crowns and walls of the burning zone of the tunnel kilns were replaced by magnesite chromite, the VZ II O taking part in this work; this made it possible to increase the temperature of burning to 17oo-172o°. Furthermore the names of these members of the staff are mentioned who have been working with this same firm ever since the foundation of the works, just as well as those who have been working there for 2o years and retired in 1957. For their long and good work they were entered into the "Kniga Pochota" (Book of Honor). In 1958 the area covered by the apartment houses of these works covered 3o,ooo m^2. A school and kindergartens were built as well. In 1958 the construction of a rotating kiln for the burning of chamotte is to be finished. Furthermore a number of improve-

Card 2/3

131-58-6-1/14

AUTHOR: Mitin, P. A.

TITLE: 25-th Anniversary of the Zaporozh'ye Works for Refractories (Dvadtsatipyatiletiye Zaporozhskogo ogneupornogo zavoda)

PERIODICAL: Ogneupory, 1958, Nr 6, pp. 241-244 (USSR)

ABSTRACT: These works were built within the metallurgical Kombinate "Zaporozhstal" in the years 1929-1932. In 1940 it had an output of 66,000 t. From October 1941-October 1943 the works were not in operation because of the war. The reconstruction of the destroyed works started in 1944. In 1945 the works started to produce again. In 1950 the prewar output was reached, the work being more modern and more progressive in equipment and organization. The rationalizers A. K. Shtepa, V. A. Brylev Yu. V. Maykhrovskiy and M. Ye. Kotsyuba earned special merits in this work. In 1957 an automatic train for the pressing of little outer steam tubes on the SM-143 press was developed by the constructors Yu. V. Maykhrovskiy, A. K. Shtepa and V. V. Volnyanskiy, the output of pressing thus having been increased 1,5-2 times. In 3 pictures the total views of the works are shown. By G. V. Masyura and M. Ye. Kotsyuba's proposal also the operation of the ball mills and their supplementary equip-

Card 1/3

SOKOLOV, A.; TALAYEVA, M.; MITIN, P.; MIROPOL'SKIY, I.; OCHKIN, V.; GOL'FMAN, B.; STROMOV, V.; BORISOV, V.

Exchange of practices. Mias. ind. SSSR 33 no.4:33-40 '62. (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti (for Sokolov, Talayeva, Ochkin). 2. Gomel'skiy myasokombinat (for Mitin, Miropol'skiy). 3. Brestskiy myasotrest (for Gol'fman). 4. Kislovodskiy myasokombinat (for Stromov). 5. Rizhskiy zavod "Kompressor" (for Borisov).

MIROPOL'SKIY, I.; MITIN, P.

Mechanized line for the processing of tripes. Mias ind SSSR 34 no. 6:42-43 '63. (MIRA 17:5)

1. Gomel'skiy myasokombinat.

MITIN, P.; VINOGRADOV, A.

Needs of the Zaporozh'ye refractories industry. NTO 6 no.6: 20-22 Je '64. (MIRA 17:8)

1. Direktor Zaporozhskogo ogneupornogo zavoda (for Mitin).
2. Uchenyy sekretar' sektsii ogneuporov Tsentral'nogo pravleniya nauchno-tekhnicheskogo obshchestva chernoy metallurgii (for Vinogradov).

KOROTKOV, B.S.; MITIN, N.Ye.; TESLENKO, P.F.

Evaluation of oil and gas bearing prospects of the Maykop sediments in Krasnodar Territory. Izv. vys. ucheb. zav.; neft' i gaz. 7 no.10:3-7 '64. (MIRA 18:2)

1. Rostovskiy gosudarstvennyy universitet i Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

LYAKHOVICH, P.K.; M[illegible]TIN, N.Ye.

Formation of the [illegible] in the [illegible] sediments of central [illegible]. [illegible] no.7:29-32 '65.

1. Ob"yedinennyye [illegible] kraya.

MITIN, N.Ye.

Miocene and Pliocene variegated formation in western Ciscaucasia.
Lit. i pol. iskop. no.4:108-110 Jl-Ag '66. (MIRA 17:11)

1. Ob"yedineniye "Krasnodarneftegaz", Krasnodar.

MITIN, N.Ye.

Hydrodynamic regionalization and the reservoir energy resources of the gas- and oil-bearing horizons of the southern sectors of central and western Ciscaucasia. Gaz. prom. 8 no.11:12-16 '63. (MIRA 17:11)

KOTOV, V.S.; MITIN, N. Ya.

Oil and gas pools in contact with fresh waters. Neftegaz. geol. i geofiz. no.11:14-17'63 (MIRA 17:1)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

MITIN, N.Ye.

New data on the halogenic formation in the northwestern Caucasus. Dokl. AN SSSR 147 no.2:442-444 N '62. (MIRA 15:11)

1. Upravleniye neftyanoy i gazovoy promyshlennosti "Krasnodarneft'". Predstavleno akademikom N.M. Strakhovym.
(Caucasus--Salt deposits)

LEBEDEVA, N.A.; MITIN, N.Ye.

Stratigraphy of Neogene-Quaternary sediments in the eastern part of the Kuban Lowland. Trudy Kom.chetv.per. 19:223-239 '62. (MIRA 16:1)

(Kuban Lowland--Geology, Stratigraphic)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700030-6

MITIN, N.Ye.

Manifestation of gypsum tectonics in the northwestern Caucasus. Trudy KF VNII no.10:185-189 '62. (MIRA 15:11)
(Caucasus, Northern--Gypsum)
(Caucasus, Northern--Geology, Structural)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700030-6

D'YAKONOV, A.I.; MITIN, N.Ye.; SHELKOPLYAS, P.A.

Study of the Permian and Triassic sediments of the Belaya Basin in the northwestern Caucasus. Trudy KF VNII no.10:149-157 '62. (MIRA 15:11)
(Belaya Valley (Krasnodar Territory)--Geology, Stratigraphic)

MITIN, N.Ye.

Upper Jurassic and Valanginian volcanic sedimentary formations in the Northern Caucasus. Dokl. AN SSSR 137 no.6:1362-1365 Ap '61. (MIRA 17:5)

1. Predstavleno akademikom D.V. Nalivkinym.

MITIN, N.Ye.

Relationship between continental and marine sediments of the Neogene-Quaternary age in the Kuban. Sov.geol. 5 no.6:112-114 Je '62. (MIRA 15:11)

1. Ob"yedineniye neftyanoy promyshlennosti Krasnodarskogo kraya.
(Kuban--Rocks, Sedimentary) (Kuban--Deep-sea deposits)

MITIN, N.Ye.; BEZBORODOV, R.S.

Deposition and oil and gas potentials of Jurassic sediments in the Barakaevskoy field. Geol. nefti 2 no.11:6-12 N '58. (MIRA 11:12)

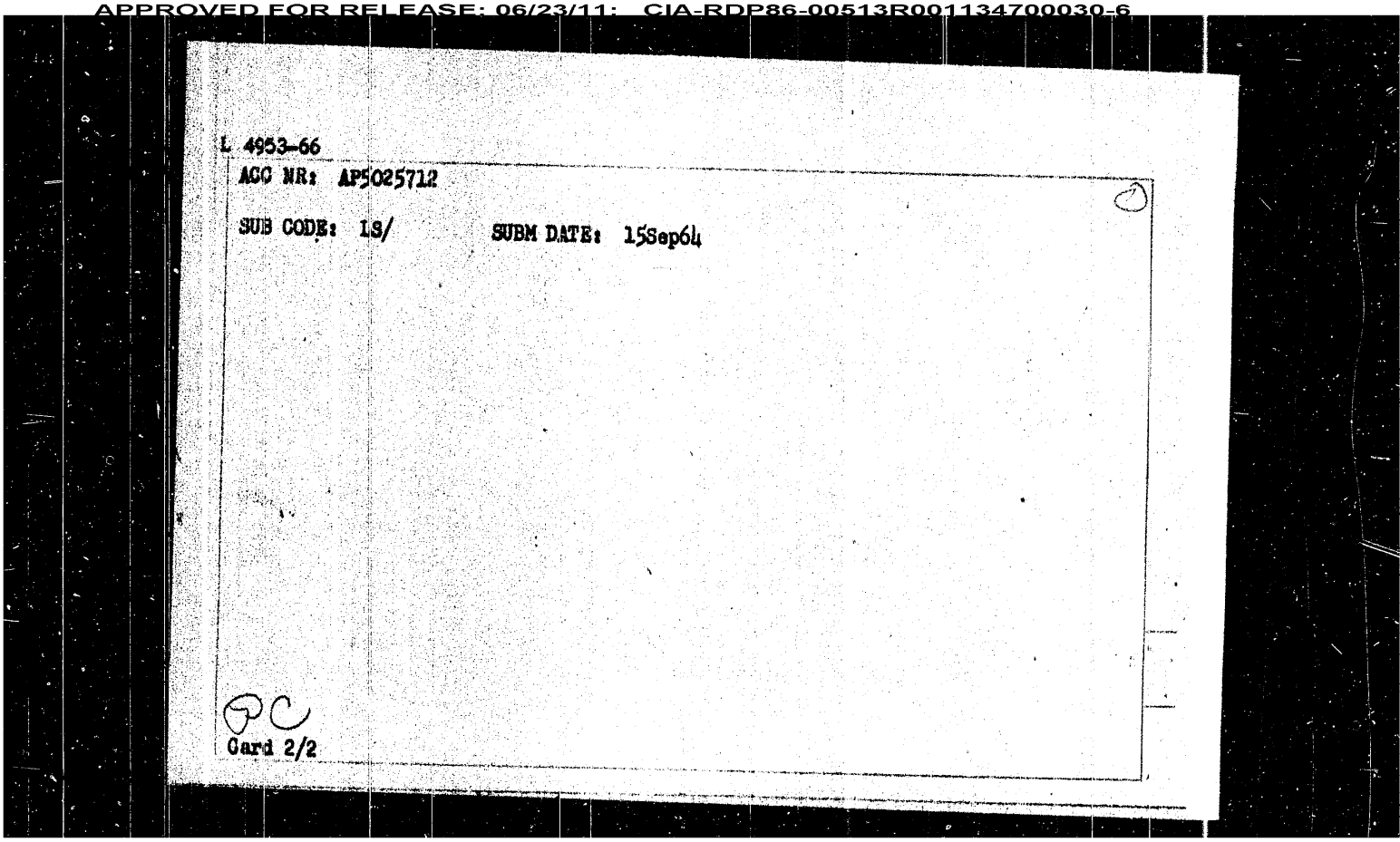
1.Krasnodarskiy sovnarkhoz, nefterazvedka No.1.
(Caucasus, Northern--Petroleum geology)
(Caucasus, Northern--Gas, Natural--Geology)

MITIN, N.Ye.

Using heavy clays in core drilling. Neftianik 1 no.7:10-11 Jl '56. (MLRA 9:11)

1. Starshiy geolog razvedki no.1 tresta Krasnodarnefterazvedka.
(Oil well drilling fluids)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700030-6



L 4953-66
ACC NR: AP5025712

SUB CODE: LS/ SUBM DATE: 15Sep64

PC
Card 2/2

L 4953-66 EWT(l)/EWA(j)/EWA(b)-2 JK

ACC NR: AP5025712 SOURCE CODE: UR/0286/65/000/018/0067/0067

AUTHORS: Mitin, N. I.; Petrov, Yu. I.; Syurin, V. N.; Mel'nik, N. N.

ORG: none

TITLE: Strain LT of plague of cattle. Class 30, No. 174765

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 67

TOPIC TAGS: virus LT, cattle, immunity

ABSTRACT: This Author Certificate describes the strain LT of the plague of cattle, 1964. Culture properties: grown on a culture of cattle kidney cells. Causes cytopathogenic action with formation of symplasts, internuclear and cytoplasmatic inclusions on the 4th to 9th day after virus injection. Titer 10^5, TsPD 50/ml. Reactogenic properties: causes a light temperature reaction in affected cattle. Antigenic properties: causes the formation of virus-neutralizing and complement-fixing antibodies. Immunogenic properties: causes in animals a sustained immunity to epizootic virus according to the type of interference. Nonreversible; non-contagious.

Card 1/2

UDC: 576.858.7:619:616.998.27

KHESIN, Ya.Ye; SUSHKOV, F.V.; MITIN, N.I.

Dimensions of the cell nuclei in monostratal tissue cultures of cow and swine embryonal kidneys. TSitologiia no.1:43-51 Ja-F'63. (MIRA 16:6)

1. Laboratoriya patogistologii Moskovskogo nauchno-issledovatel'skogo instituta virusnykh preparatov.
(CELL NUCLEI) (TISSUE CULTURE)

USSR/General Problems of Pathology - Inflammation. U

Abs Jour : Ref Zhur Biol., No 1, 4028

Author : Mitin, N.I.

Inst : Moscow Veterinary Academy

Title : Effect of Desympathization Upon the Healing Rate of Wounds.

Orig Pub : Tr. Mosk. vet. akad., 1957, 20, 71-77

Abstract : The upper cervical sympathetic ganglion was removed in rabbits, horses, a calf and dog, and simultaneously a wound was inflicted in the area of the ear on the ipsilateral side. The inflammatory reaction (IR) developed on the second day, its localizatin occurred on the 7th day, and the wound healed on the 24th day. In controls this occurred, correspondingly, on the 5th, 12th and 30th days. The wound took longer to heal (within 38-41

Card 1/2

USSR/Human and Animal Physiology (Normal and Pathological) T-1
General Problems.

Abs Jour : Ref Zhur - Biol., No 16, 1958, 74425

Author : Mitin, N.I.

Inst : Moscow Veterinary Academy.

Title : Adrenalin as a Humoral Conductor of Nerve Regulation.

Orig Pub : Tr. Mosk. vet. akad., 1957, 20, 66-71

Abstract : No abstract.

Card 1/1

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700030-6

MITIN, N. I.

MITIN, N. I.: "The role of the nervous system in the tissue trophism of agricultural animals." Moscow, 1955. Moscow Veterinary Academy, Min Higher Education USSR. (Dissertation for the Degree of Candidate of Biological Science)

SO: Knizhnaya Letopis' No. 47, 22 November 1955, Moscow.

MITIN, N.G.; SEN', Z.P.; LUCHKA, M.Kh.

Mechanized production line for the manufacture of dishes. Stek. i ker. 19 no.2:36-38 F '62. (MIRA 15:3)
(Baranovka--Porcelain)

ZAHARIKOV, N.A. [Zakharikov, N.A.]; LESOVOI, N.V. [Lesovoy, N.V.]; MITIN, N.G.; PIORO, L.S.

Intensifying porcelain whiteness by chlorine treatment. Analele chimie 17 no.2:152-163 Ap-Je '62.

ZAKHARIKOV, N.A.; LESOVOY, N.V.; MITIN, N.G.; PIORO, L.S.

Calcinating porcelain in a gas bleaching medium. Stek. i ker. 18 no.2:15-19 F '61. (MIRA 14:3)
(Porcelain)

MITIN, N.G.; ZUBATOVA, I.N.; ROMANOVSKAYA, Z.Z.; KUDRINA, T.I.; VISHNEVSKIY, B.I.

Manufacturing porcelain ware by the method of slip casting. Stek. i ker. 17 no.9:38-41 S '60. (MIRA 13:9)

(Porcelain)

MITIN, Nikolay Aleksandrovich, kand. tekhn. nauk

[Tables for laying out curves for logging roads] Tablitsy dlia razbivki krivykh na lesovoznykh avto- mobil'nykh dorogakh. Moskva, Lesnaia promyshlen- nost', 1964. 111 p. (MIRA 18:3)

v = 0.015 c, and (2) T = 10 Mev, V = 5 Mev, v = 0; T is the temperature, V the Coulomb barrier and v the velocity of the nucleus hit by the proton. Curve (1) agrees closely with the distribution measured; the latter has, however, a tail at high energies. The angular distributions plotted for E > 21 Mev and E < 21 Mev show a considerable difference: the low-energy group of Li^6 fragments in the lab system is almost isotropic (forward-backward ratio = 1.37 ± 0.30) that of the fast group is anisotropic (2.10 ± 0.40). The energy distribution as well as the angular distribution (characterized by the forward-backward ratio) are both virtually independent of W_b. Except for the large width of the energy spectrum all characteristics agree with the theory of Li^6 evaporation from a highly excited nucleus. There are 5 figures and 1 table.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: September 24, 1962

S/056/63/044/002/018/065
B102/B186

AUTHORS: Bogachev, N. P., Grigor'yev, Ye. L., Merekov, Yu. I., Mitin, N. A.

TITLE: Emission of Li^8 fragments in Ag and Br nuclear disintegrations induced by 9-Bev proton bombardment

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 2, 1963, 493-497

TEXT: Nuclear emulsions of the type НИКФИ-Р (NIKFI-R) were exposed to proton bombardment in a synchrotron. Among the total of 15,764 stars with $N_b \geq 8$ found on microscopic scanning, 344 contained one and 7 two Li^8 tracks; N_b is the number of black prongs. After a correction for the Li^8 fragments not stopped inside the layer, the total number of stars containing Li^8 tracks amounts to 428. The Li^8 yield was found to increase with N_b (from 8 to 30) from 0.012 ± 0.002 to 0.072 ± 0.021. The energy distribution of the Li^8 fragments is compared with the curves calculated on the basis of the evaporation model for (1) T = 10 Mev, V = 5 Mev,

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Elastic Scattering of the 390 mev π^+-Mesons by Protons

76972
SOV/56-37-6-12/55

and $\alpha_{31} = -16^\circ$. L. B. Parfenov participated in this work. The text contains 1 table; 1 graph; and 5 references, 4 Soviet, 1 U.S. The U.S. reference is: J. Orear. Phys. Rev., 96, 176, 1954.

ASSOCIATION: Joint Inst. Nuclear Research, USSR (Ob'edinennyy institut yadernykh issledovaniy, SSSR)

SUBMITTED: July 9, 1959

Card 2/2

24.6200,24.6510,
24.6520,16.8100

76972
SOV/56-37-6-12/55

AUTHORS: Grigor'ev, E. L., Mitin, N. A.

TITLE: Elastic Scattering of the 390 mev π^+-Mesons by Protons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1583-1586 (USSR)

ABSTRACT: Measurements were made of the angular distribution of the (390 ± 25) mev π^+-mesons elastically scattered on hydrogen. The thickness of nuclear photoemulsion (type NIKFI-R) was 400μ. The detailed experimental conditions were given by the authors in their previous work (cf. Zhur. eksp. i teoret. fiz., 31, 37, 1956; 32, 440, 1957). The plot of the differential scattering cross section was described by the relation:

$$d\sigma/d\Omega = [(1,12 \pm 0,22) + (4,27 \pm 0,84)\cos\vartheta + (4,68 \pm 1,08)\cos^2\vartheta] \times 10^{-27}\ см^2/стерад, \quad (1)$$

The following phase shifts of the Fermi solution were obtained by assuming that only S- and P-states participate in the scattering: $a_3 = -34^\circ$, $a_{33} = 151^\circ$,

Card 1/2

The Polarization of the Recoil Nuclei in Elastic π^+-p Scattering at an Energy of 307 Mev

responding to phase shift sets with different selection of the sign of δ_{33} and δ_{35}, table 4 - the same for a phase shift set according to Yang. The problems arising in connection with the use of different phase shift sets for analysis of the experimental data are discussed. The authors finally thank I. I. Levintov for advice and discussions, A. I. Mukhin for his help in carrying out experiments, S. B. Nurushev for discussing the results obtained, L. Mal'tseva, T. Rybakova and M. Khristova for evaluating the emulsions, and Professors V. P. Dzhelepov and B. M. Pontekorvo for the interest they displayed. There are 3 figures, 4 tables, and 11 references, 3 of which are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: April 1, 1959

Card 3/3

The Polarization of the Recoil Nuclei in Elastic π^+-p Scattering at an Energy of 307 Mev

corresponds to scattering through an angle of $140\pm8^\circ$ in the c.m.s. The angle of inclination of the tracks with respect to the emulsion plane ought not to exceed 12°. Grain density in the tracks followed should correspond to that in 160 Mev proton tracks. Measuring results are given by tables. In the plates to the right and to the left of the pion beam axis 545 cases of an elastic scattering of recoil protons on emulsion nuclei were found within the interval $\vartheta_p = 3.5 - 27^\circ$ (azimuthal angle $0^\circ \leqslant \varphi \leqslant 60^\circ$). The measuring results for the right and the left photoplates are given separately in table 1, and for the four angular intervals, in which measurements were carried out, the degree of asymmetry was calculated. Calculation of polarization was carried out on the basis of the "optimum" phase shift set (SPD analysis) (Table 2). The phase shifts satisfying the indicated polarization value and consistent with the differential cross section for the elastic scattering of π^+-megons by protons are given: $\alpha_3 = -23.2^\circ$, $\alpha_{33} = 1.33.2^\circ$, $\alpha_{31} = -8.4^\circ$;

Card 2/3 $\delta_{33} = (2^{+3}_{-2})^\circ$, $\delta_{35} = (-2^{+2}_{-3})^\circ$. Table 3 contains the α_i-values for

SOV/56-37-2-13/56

21(7)
AUTHORS: Grigor'yev, Ye. L., Mitin, N. A.

TITLE: The Polarization of the Recoil Nuclei in Elastic π^+-p Scattering at an Energy of 307 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 2(8), pp 413-421 (USSR)

ABSTRACT: The present very detailed paper deals with polarization measurements on recoil nuclei and with problems of the SPD-phase analysis. The experimental arrangement is shown schematically by figure 2, the method, according to which the π^+-beam was obtained, has already been described several times. The pion beam ($E_{\pi^+} = 307 \pm 5$ Mev) impinged after emerging from the collimator (diameter 5 cm) upon the target of liquid hydrogen, which was located in a special metal vessel. The neutron-sensitive photoemulsions of the type NIKFI-R (layer thickness 400 μ) were arranged at an angle of 20° with respect to the pion beam. Selection of the protons to be investigated was carried out from the following points of view: deviation of the proton tracks from the main direction (20°) should not be greater than ±4%, which

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PA - 2954

The Elastic Scattering of Positive 360 MeV Pions by Protons.

in series according to the LEGENDRE polynomials $d\sigma/\Omega = \sum_n A_n P_n(\cos\vartheta)$ the following expression is obtained for the differential cross section, $d\sigma/d\Omega = 3,43P_0 + 4,63 P_1 + 4,20 P_2 + 0,57 P_3 - 0,81 P_4 \cdot 10^{-2} \cos^2\vartheta$ sterad. By an explicit development of this expression the differential cross section can be written down in form of a series according to the powers of $\cos\vartheta$. This series is here written down in third and fourth approximation. By means of a graphical method the following phase shifts were compited, $\alpha_{33} = 146^0$, $\alpha_{31} = -14^0$, $\alpha_3 = -31^0$. By the SFD analysis by means of a mechanical phase analyzer the following phase shifts were obtained, $\alpha_{33} = 143^0$, $\alpha_{31} = -5^0$, $\alpha_3 = -14^0$, $\delta_{33} = 10^0$, $\delta_{35} = -13^0$. The differential scattering cross section corresponding tothese and other values of the phases is shown in form of a diagram and agrees well with experimental data. (2 ill., and 1 table).

ASSOCIATION United Institue for Nuclear Research.
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SUBMITTED 19.10.1956.
AVAILABLE Library of Congress.
Card 2/2

MITIN, N.A.

AUTHOR MITIN, N.A., GROGOR'YEV, E.L.,

TITLE The Elastic Scattering of Positive 360 MeV Pions by Protons. PA - 2958
(Uprugoye rasseyaniye protonami polozhitel'nykh π-mezonov s energiyey 360 MeV - Russian)

PERIODICAL Zhurnal Eksperim.i Teoret. Fiziki, 1957, Vol 32, Nr 3, pp 440-444, (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT The present paper measures the angular distribution of positive pions with the energy 360 ± 10 MeV, which were scatted on the hydrogen nuclei contained in the photoemulsion, by means of the method of nuclear photo emulsions. These measurements were carried out with the synchrocyclotron of the United Institue of Nuclear Research. The electron- sensitive photo plates with a layer of a thickness of 400 were irradiated at the outlet of a magnetic spectrometer in a bundle of positive pions. The pions were produced in a carbon target of 5 cm thickness on the occasion of the bom- barding by the bundle of 657 MeV protons emerging from the chamber of the synchrocyclotron. The authors found 218 cases of a scattering within the interval of the angles of from 10 to 170° in the center of mass system. The interval of summation amounted to 20°. The distribution of the num- ber of acts of scattering over the angle intervals is shown in form of a table. The total cross section σ_t of the elastic scattering was selected equal to $43,4.10^{-27}$ cm^2. The experimental data obtained are shown in a diagram. If the experimental results are represented as a development

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MITIN, N.A., MUKHIN, A.I., OZEROV, E.B., PONTEKORVO, B.M., GRIGOR'YEV, E.L.

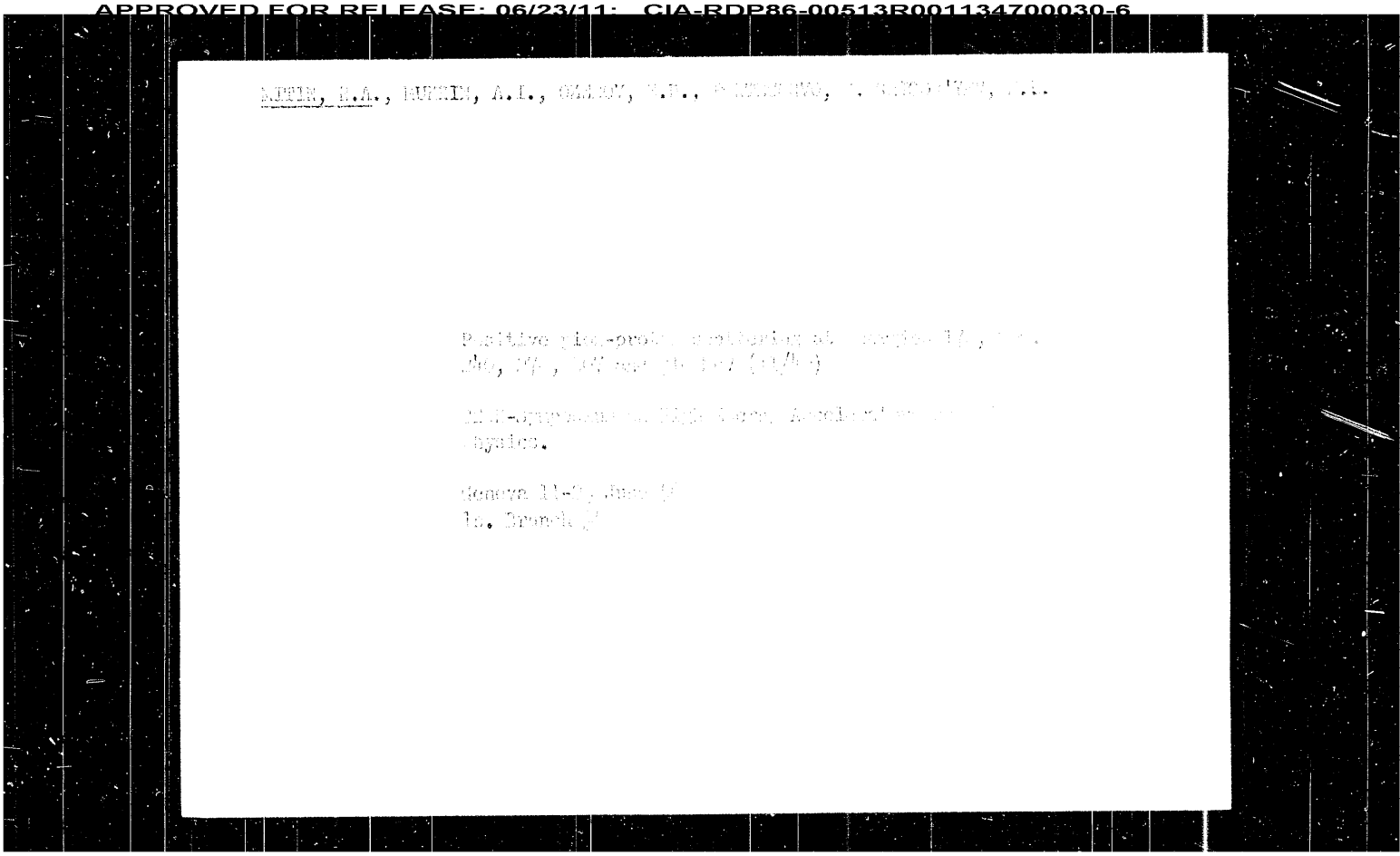
"Positive Pion-Proton Scattering at Energies 176, 200, 240, 270, 307 and 310 MeV," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

MITIN, N.A.

CARD 1 / 2 PA - 1337

SUBJECT USSR / PHYSICS
AUTHOR GRIGOR'EV, E.L., MITIN, N.A.
TITLE The Elastic Scattering of Positive Pions with an Energy of 310 MeV by Protons.
PERIODICAL Zurn.eksp.i teor.fis, 31, fasc. 1, 37-39 (1956)
Issued: 9 / 1956 reviewed: 10 / 1956

The differential cross section of the elastic scattering of positive 310 MeV pions by hydrogen was measured by means of nuclear photoemulsions. The electron-sensitive photo plates with an emulsion thickness of 400 μ were irradiated with a bundle of positive pions at the output of a magnetic spectrometer. The mesons were produced by bombarding a paraffin target by a bundle of 660 MeV protons of a synchrocyclotron. The scattering processes were selected by means of a micro-scope with an immersion objective. The acts of elastic scattering were identi-fied by the following criteria: 1.) Angular correlation between the scattered meson and the recoil proton. 2.) Complanarity. The complanarity condition is explicitly given. 427 scattering processes were found in the sector of dial 10-170° (in the center of mass system). The differential scattering cross section found on the basis of these results has, according to the diagram attached, a minimum at 105°. The total scattering cross section of the positive 310 MeV pions was assumed to be 7.10^{-27} cm^2. (The summation interval was 20°). The differ-ential cross section can be expressed by the first three terms of a LEGENDRE series: $d\sigma/d\Omega = [(2,4\pm0,2) + (4,9\pm0,4)\cos\vartheta + (9,3\pm0,7)\cos^2\vartheta].10^{-27}$ cm^2/sterad.



MITIN, M. A.

USSR/Physics - Non-elastic collisions

Card 1/1 Pub. 22 - 12/45

Authors : Mitin, M. A. and Grigor'ev, Ye. L.

Title : Non-elastic dispersion of negative π-mesons of 300 Mev energy by complex nuclei

Periodical : Dok. AN SSSR 103/2, 219-222, Jul 11, 1955

Abstract : Experimental measurements of the angular dispersion and energy distribution in the nonelastic collisions of π-mesons of 300 Mev energy with nucleons are described. These measurements were conducted with the help of photo-emulsions 400μ thick, where the π-mesons formed by the bombarding of a graphite target with 670 Mev protons collided with nucleons of the emulsion. Four references: 1 USSR and 3 USA (1954-1955). Graphs.

Institution : The Acad. of Sc., USSR, Institute of Nuclear Problems

Presented by : Academician L. A. Artsimovich, May 5, 1955

MITIN, Nikolay Aleksandrovich; PROKHOROV, G.P., kand. tekhn.nauk; VASIL'YEVA, V.I., red.izd-va; ROMANOVA, V.V., tekhn.red.

[Tables for laying out horizontal and vertical circular curves and curvatures with connecting curves on highways] Tablitsy dlia razbivki gorizontal'nykh i vertikal'nykh krugovykh i zakrugleniĭ s perekhodnymi krivymi na avtomobil'nykh dorogakh. Moskva, Gosgeoltekhizdat, 1963. 490 p. (MIRA 17:2)

MITIN, N.A., PROKHOROV, G.P.

A new method of computing and marking out curvatures with transition curves on automobile highways. Sbor. st. po geog. no.11:53-62 '60. (MIRA 13:8)

(Roads--Surveying)

MITIN, N.A.

Some problems in the work of the Lokot District Hospital following reorganization. Zdrav. Ros. Feder. 5 no.1:19-22 Ja '61.

1. Glavnyy vrach Loktevskogo rayona Altayskogo kraya.
(LOKOT DISTRICT (ALTAI TERRITORY)--HOSPITALS, RURAL)

MITIN, Mikhail Nikolayevich. MELIKOVAN, Rafael' Vagarovich;
[illegible]YABLNOK, A.G., red.

[Electrochemical dimensional machining of diesel engine parts] Elektrokhimicheskaia razmernaia obrabotka detalei dizel'noi apparatury. Leningrad, 1964. 16 p.
(MIRA 17:9)

MITIN, M.N.

USSR/Cosmochemistry. Geochemistry. Hydrochemistry. D

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26574.

Author : Mitin, M.N.
Inst : All-Union Scientific Research Institute of Mineral Oil and Natural Gas.
Title : Methods of Computation of Age of Water below Mineral Oil Bearing Layers by Contents of Rare Gases in It.

Orig Pub : Tr. Vses. neftegaz. n.-i. in-t, 1956, vyp. 9, 233 - 246.

Abstract : No abstract.

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